

A
Dissertation

on

Trachitis

Submitted to the inspection of the

Medical Professors

and

Trustees

of

The University of Pennsylvania
for the Degree of

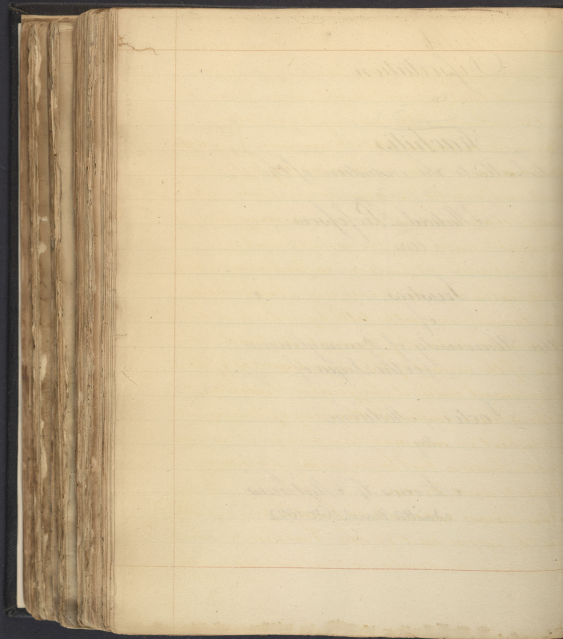
Doctor of Medicine

by

Amos G. Mathias

admitted March 16th 1822

1821.

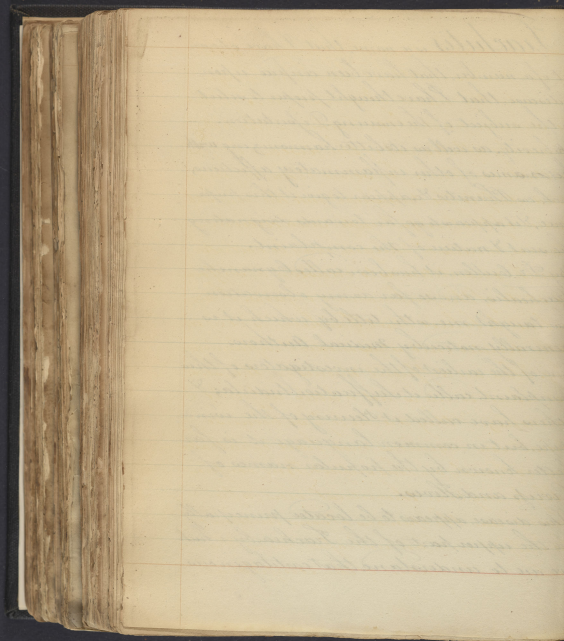


Tracheitis is a name, that I have chosen out of a number, that have been confus'd upon a disease that I have thought proper to select as the subject of the ensuing Dissertation. Its brevity, as well as its better harmonizing with the names of other inflammatory affections, such as *Phrenitis* &c, appear to give it this preference, 'till it appears to go far towards designating the seat & nature of the complaint.

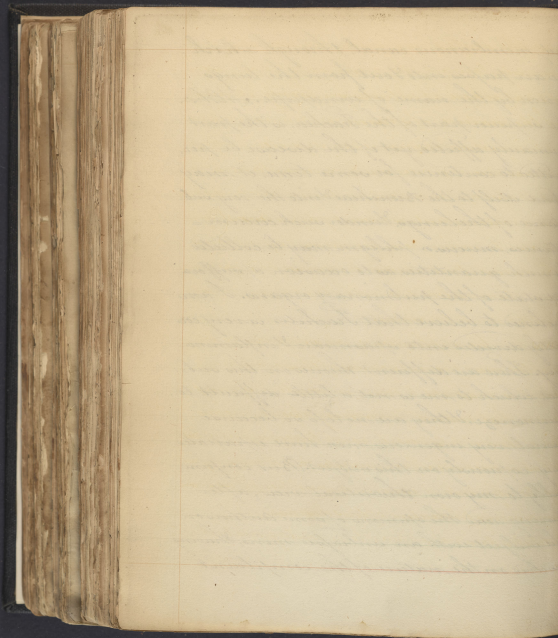
My Dr. Cullen, it has been called *Cynanche Trachealis*, and so far as my observation has taught me, is the title by which it is generally noticed by Medical Authors.

One of the earliest of the investigators of this complaint, called it *Sufficatio Stindula*; & others have called it *Stenosis* of the wind-pipe, but in common language it is far better known by the popular names of *Croup* and *Hoars*.

This disease, appears to be located principally in the upper part of the *Trachea*, by which we are to understand, that cartilaginous



and membranous canal, through which
the air passes into & out from the lungs
known by the name of windpipe. Altho
the superior part of the Trachea, is the part
primarily affected yet if the disease be per-
mitted to continue for some time, it may
extend itself to the Bronchia & into the very sub-
stance of the lungs. Under such circum-
stances, mucus, or phlegm, may be collected
in such quantities, as to occasion a suffoca-
ted state of the pulmonary organs. I am
inclined to believe that Trachitis is very cor-
rectly divided into spasmodic & inflamma-
tory. There are different theories on this sub-
ject, which to me is not a little difficult to
harmonize, & they are no less so because
several very ingenious men have expatiated
very copiously on this subject. But conform-
ably to my own theoretical view, after
having read the opinions of some Authors on
the subject with an unbiased mind, I having
revolved on the nature of the complaint

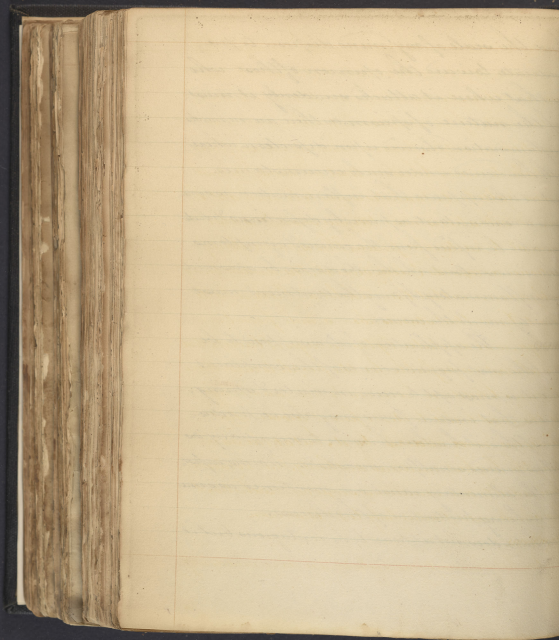


I find the scale of my mind disposed to preponderate toward the opinion of those who say that when it attacks suddenly it must be of the nature of spasm, as there are remarks of inflammation observed upon dissection, where death has occurred under such circumstances.

But it also appears that inflammation is sometimes a concomitant, as proved by dissections. It which may also be inferred from the causes & symptoms of the disease. But whether the disease be spasmodic or inflammatory, I fancy the treatment must be pretty much the same.

Causes. The application of cold as supposed to be one of the most frequent sources of this complaint, hence it is most apt to occur in winter & spring; causes that induce fevers, may also be productive of this, it has been known to accompany as well as succeed smallpox, measles &c. Worms, infesting the alimentary canal, are mentioned as sometimes being productive of this disease.

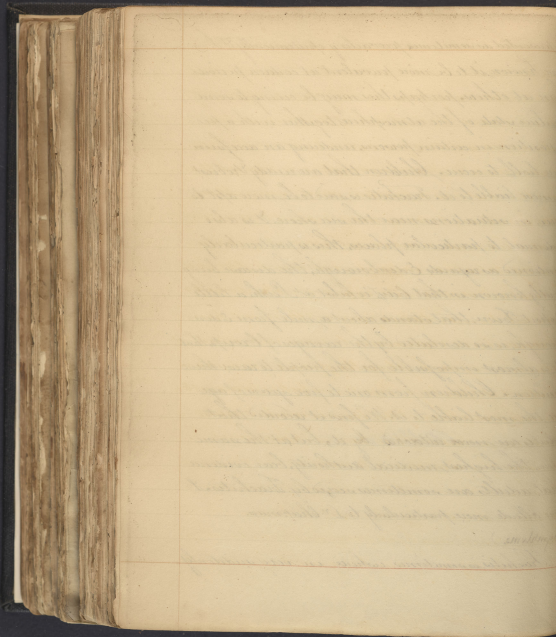
Trachitis does not appear to be contagious, but it



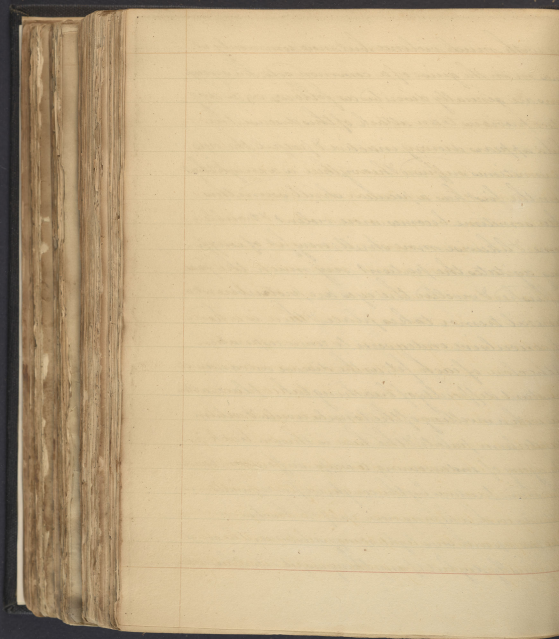
is represented as sometimes prevailing epidemically & I have known it to be more prevalent at certain periods than at others. perhaps this may be owing to some peculiar state of the atmosphere, together with a predisposition in certain persons, rendering an accession more liable to occur. Children that are weakly & robust are most liable to it. Trachitis is said to be more apt to occur, in situations near the sea shore, & is also endemic to particular places, this is particularly mentioned as regards Edenborough, the disease being hardly known in that City, whilst at Scith a little seaport Town, that stands about a mile from Edenborough, is so desolated by the ravages of Croup, that it is almost impossible for the people to raise their children. Children from one to five years of age are the most liable to it. We find it recorded that adults are never attacked by it, but at the same time, the highest medical authority, bear evidence that adults are sometimes seized by Trachitis, & here allude more particularly to Dr. Chapman.

Symptoms

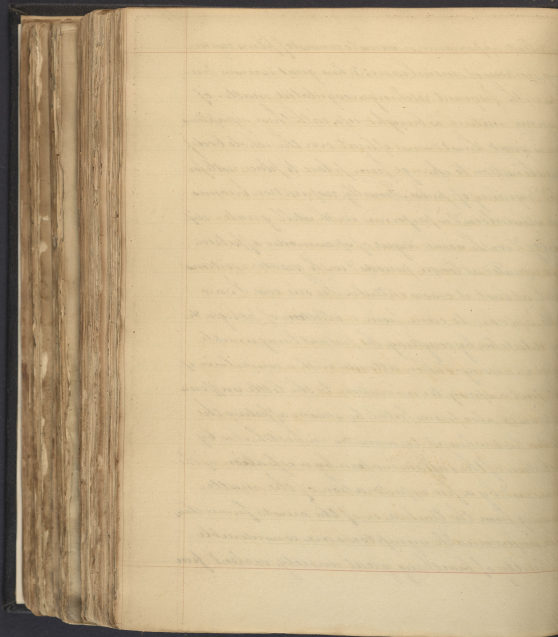
Trachitis is sometimes ushered in very suddenly



and with much violence, but more commonly it comes on in the guise of a common cold. The symptoms are generally described as follows, viz. a day or two previous to an attack of this disease, the child appears drowsy, inactive & peevish, the eyes are sometimes suffused & heavy, there is a cough that from the first has a peculiar shrill sound, this after sometime, becomes more violent & troublesome, & likewise more shrill; every fit of coughing agitates the patient very much, the face is flushed & swelled, the eyes are protuberant, a general tremor takes place, & there is a kind of convulsive endeavour to renew respiration at the close of each fit, as the disease advances a constant difficulty of breathing takes place, attended with a swelling of the tonsils, uvula & velum pendulum palati, & the head is thrown back, in the agony of endeavouring to escape suffocation, besides the sound produced by the cough, we find respiration is attended with a hissing noise, as if the Trachea were stopped up with some light spongy substance. The cough is generally dry, but if any thing is spit up, it has either



a purulent appearance, or seems to consist of films resembling portions of membrane; when great nausea prevails with frequent retchings, coagulated matter of the same nature is brought up, with these symptoms there is great thirst & sense of heat over the whole body, an inclination to change from place to place, restlessness & frequency of pulse. Finally, respiration becomes more stridulous, & is performed with still greater difficulty, & with some degree of spasmodic affection, being repeated at longer periods & with greater exertions until at last it ceases entirely. In one case I saw death appear to occur from a collection of phlegm &c. being detached by coughing, the patient being unable to spit it, strangulation, attended with a convulsive effort put a speedy termination to the little sufferer's existence; it also proves fatal by spasm affecting the glottis, but when it terminates in health, it is by resolution of the inflammation, by a cessation of the spasm & by a free expectoration of the matter issuing from the trachea, or of the crusts formed there. The unfavourable symptoms are, considerable difficulty of breathing great anxiety, violent fever



respiration & the voice becoming more still: the disease in some instances has proved fatal within twenty four hours, at other times it has run a course of several days. I once saw it protracted for several days, some relief having been obtained by puking &c the Physician then left the disease to wear itself out. the child continued for near a week, harassed with a very hoarse cough, till at length a sudden relapse took place & a sudden dissolution was the issue.

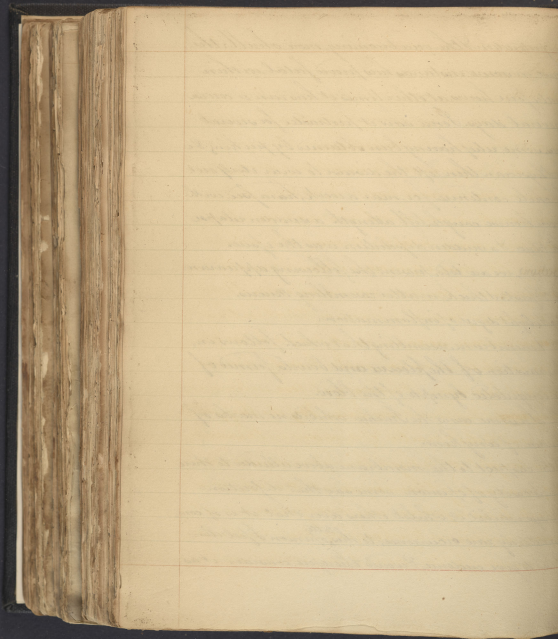
Dissections, we are told, present the following appearances, 1st A thick matter resembling Mucus,

2nd A slight degree of inflammation.

3rd A membrane, resembling that which follows inflammation of the pleura and bowels, formed of the coagulated lymph of the blood.

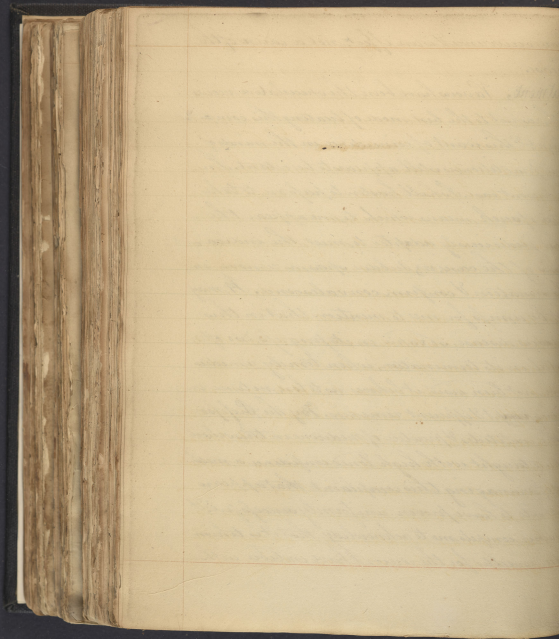
4th In some cases the Trachea exhibits no marks of disease of any kind.

With respect to the membrane above alluded to there is a diversity of opinion some say that dissections always exhibit it, whilst others aver that it is of comparatively rare occurrence, to this ^{latter} opinion I feel disposed to give evidence, I would therefore consider it as

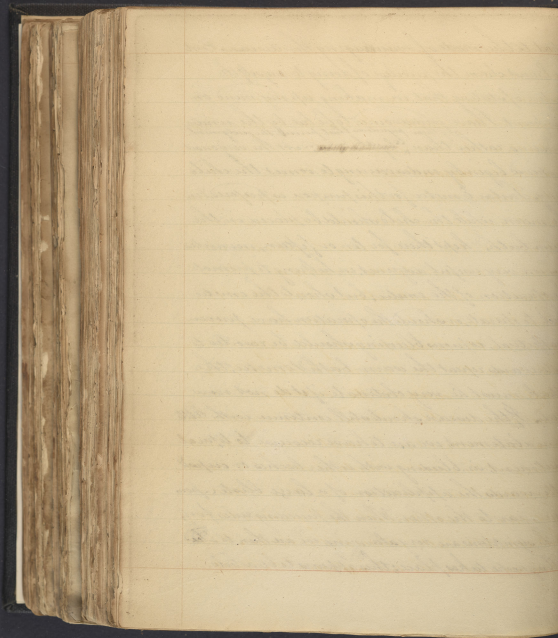


a rare occurrence & is an effect, not a cause of the disease.

Treatment, Various have been the speculative views with respect to the best mode of treating this complaint & this want of coincidence in the minds of some practitioners still appears to be extant. In the present case, I shall hasten to pass on, to take notice of such means which to me appear the most judiciously adapted to meet the indications of the case, viz subdue spasm, remove inflammation & confirm convalescence. It may not be amiss for me to mention that in this hideous disease, so rapid in its progress, & so often fatal in its termination, when timely remedies have not been used, it behoves us to lose no time in using prompt & efficient remedies. By the Professor of the institutes & practice of medicine in this school we are taught with high toned confidence a method of managing this complaint that appears hitherto to have proven uniformly successful; & candour compels me to acknowledge, that it is to him I am indebted for the views I have imbibed with

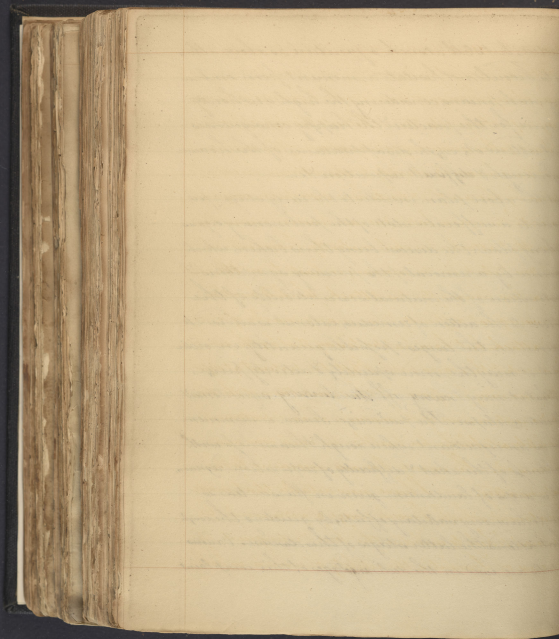


respect to the mode of managing this disease. But
here I must claim the privilege of doing to myself the
justice of stating, that in making up my mind on
this point, I have endeavoured to be led by the under-
standing, rather than ^{by those prejudices that pervert the judgment.} ~~by those prejudices that pervert the judgment.~~ At the very onset
we should begin by endeavouring to vomit the child
fully, Tarter Emetic for this purpose is preferred in
the mean while the child should be placed in the
warm bath, & kept there for ten or fifteen minutes
this is a very useful adjunct, in helping to promote
the operation of the emetic; but should the emetic
fail to operate, or should the operation have proven
ineffectual, copious bleeding should be resorted to
afterwards repeat the warm bath & emetic, the
attack must be very obstinate if it do not now
yield. If the disease should still continue with little
or no abatement, we are to have recourse to topical
treatments, viz. bleeding with either leeches or cupped
afterwards the application of a large blister, from
one year to the other; When the preceding rules fail,
or the symptoms are very alarming, we are then to bleed
till syncope takes place; this appears to be a bold

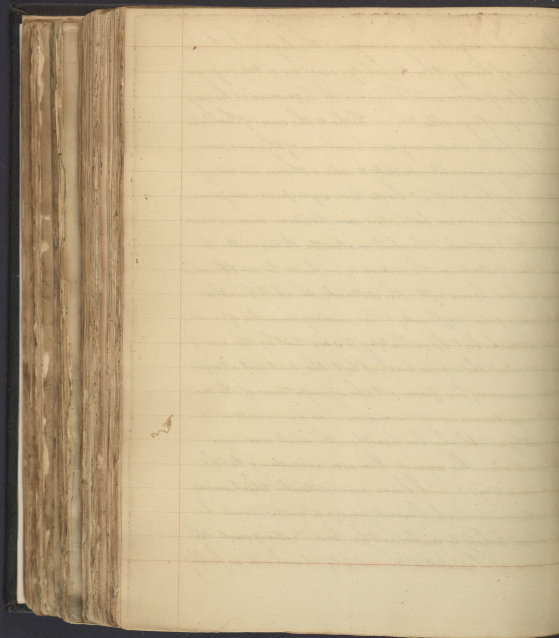


practice, but still at such a juncture as above allu-
ded to, I would not hesitate a moment from embrac-
ing such means, considering the high authority
we have for the practice & the happy consequences
that attend it, viz the disappearance of the hoarse-
ness, cough & difficult respiration &c.

But the above plan, is suited to the early stage, pre-
vious to a suffocated state of the pulmonary organs
taking place: the disease being then broken, which
is evinced by a removal of the preceding symptoms &
a restoration of the natural susceptibility of the
system to the action of remedies, calomel is advised to
be given in the largest possible quantity, in order
that it may the more speedily & actively purge,
so that it may carry off the lurking symptoms &
obviate a relapse. The pulveizer Seneca, is recom-
mended as an expectorant, when cough & hoarseness with
tightness of the chest & difficulty of respiration remain.
A few drops of laudanum given in flavoured tea, is
said to have very salutary effects, by quieting the cough
that attends the latter stages of this disease. Various
articles are used in the declining stages of this complaint

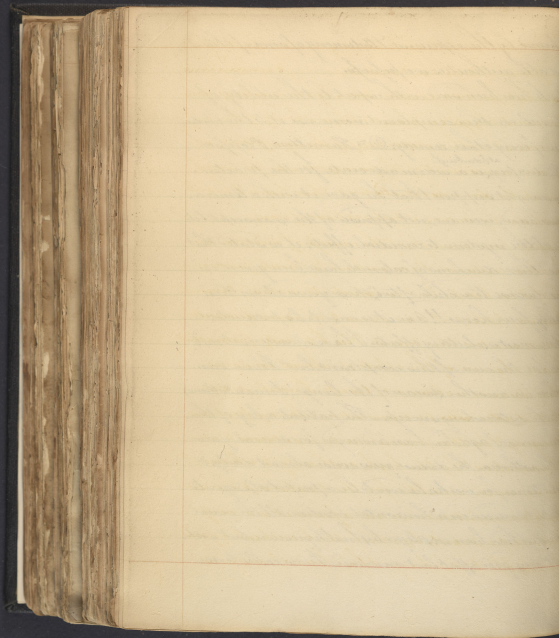


such as garlic digested in vinegar, & the liquor boiled in
a portion of honey: the infusion used as a tea, or given
by way of infusion, sweetened with the liquorice or honey,
the syrup of squills &c. — With respect to the cases of Trachitis
that have fallen under my care, have been of the milder
kind, & I have been able speedily to relieve them in every
instance by the aid of Dr. Cox's hinc syrups in conjunc-
tion with the warm bath. One case, however, occurred last
October, that attacked the child violently, I was called on
about one o'clock in the morning in haste to see the child
being a few hours after the attack; the child breathed
with very great difficulty & had many marks of a vi-
olent attack, but I am happy to say, that by the use of
this syrup & the warm bath, I left the patient at eight
in the morning free from all the symptoms of the dis-
ease & a continuance of the medicine as an expectorant,
completely established her health: — the child was near
two years old. — The syrup I made according to the
Dispensatory. — I have now detailed that mode
of treatment, which I would judge a priori, would be
the most likely to subdue the force & extinguish the
remains of Trachitis, the utility of which is fully



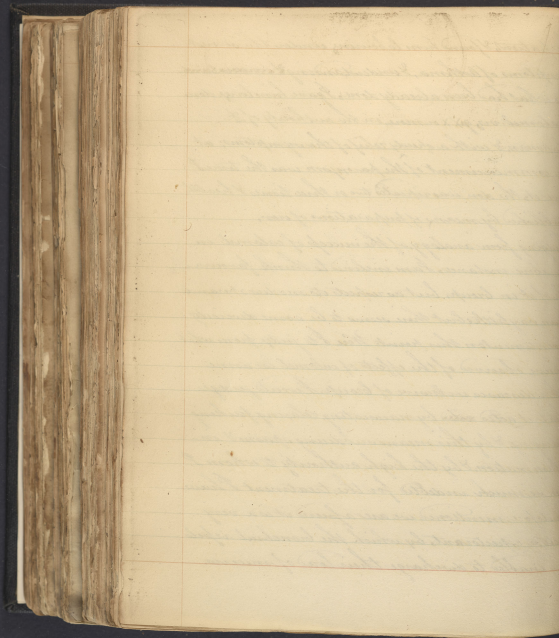
confirmed by the experience & testimony of some of the most able authorities we possess.

Much has been said with respect to the utility of calomel in this complaint, some use it to the exclusion of every other remedy, Dr. Hamilton, Professor of Midwifery, ^{at Edinburgh} is a warm advocate for the practice. One might suppose that he gave it with a temerarious hand, were we not apprised of the insusceptibility of the system to remedial effects; it is stated that two or three drachms of calomel have been given in this disease to a child of two, three years old, within twenty four hours!! and it is said to be productive of the most salutary effects. I have never seen calomel used for the cure of this complaint, but I have seen it used in another disease of the lungs. (Pneumothorax) with astonishing success. - The patient, a boy of thirteen years of age, had been annoyed for several years with asthma, the disease grew worse almost daily, & sometimes for weeks he would be a perfect stranger to sleep, procured in a horizontal position, all the usual remedies had been employed by his Physician, but without any good effect, last summer I was called to see

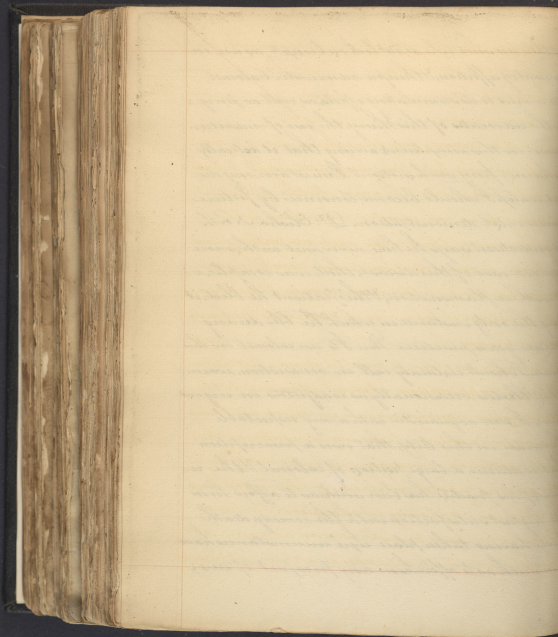


the patient, I found him labouring under the severest
symptoms of Asthma, I understanding & considering
what had been already done, I gave him large doses
of calomel, viz. gr. x or more, on the authority of Dr.
Chapman, & with a speedy relief of the symptoms; at
the commencement of the paroxysm was the time I
gave it, the dose was repeated two or three times & health
established by means of preparations of iron.

Judging from analogy, of the success of calomel in
the above instance, I am inclined to think favoura-
ble of it in Croup, but as respects its *modus operandi*
I can say little, but there seems to be some diversity
of sentiment on this point. Were I to judge from what
I have observed of the effects of calomel in some
other diseases, exclusive of Croup, I would judge
that it acted ~~rather~~ by nauseating, relaxing, purging
& purging, & by this means subduing spasm & in-
flammation, & by the high authority to whom I
am so much indebted for the treatment I have
heretofore mentioned, we are assured it is a very
active expectorant, by which the bronchial vessels
are enabled to discharge their load of mucus.



but there are some who do not look on Erysipelas as an inflammatory affection, & therefore administer Calomel with a view to its stimulating effects, as well as purge, & by the advocates of this theory, the use of venesection is denied in this complaint, availing that it actually does harm: from such notions I must ever dissent, unless I should become convinced by future experimental demonstration. Dr. Elisha North of Connecticut says he has never met with more than one case of this disease, that was complicated with inflammation, & this patient he bled, it being the only instance in which he bled during eighteen years practice. Here I do use calomel in this disease, I should certainly call in venesection, warm bath, & blisters occasionally as coadjutors in urgent cases; I am acquainted with a very respectable Physician in this City, that uses a prescription that contains a large portion of calomel & the result of his practice has been such, as to afford him the highest satisfaction with the remedy, death never having taken place, were circumstances have been such as to afford him any prospect of cure;



The recipe I shall here exhibit.

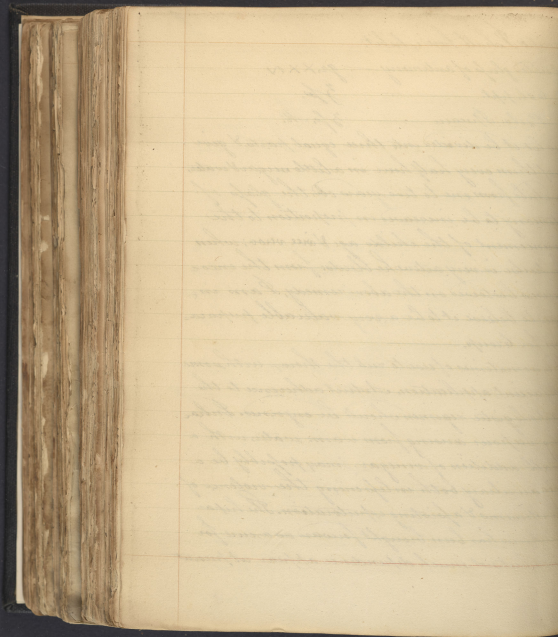
R. Croated glass of antimony — gr. XXXIV

Cal. ppt. — ʒss.

Pulv. Spicacu — ʒss. M.

And let it be divided into three equal parts, & give one of them every half hour in a little sugar & water, to a child from one to two years old, the glass of antimony to be increased in proportion to the advancement of the child's age & vice versa; when the pulse is very active he bleeds: from the emetics bestowed on the above remedy, I am induced to believe it to be a very valuable preparation for Croup.

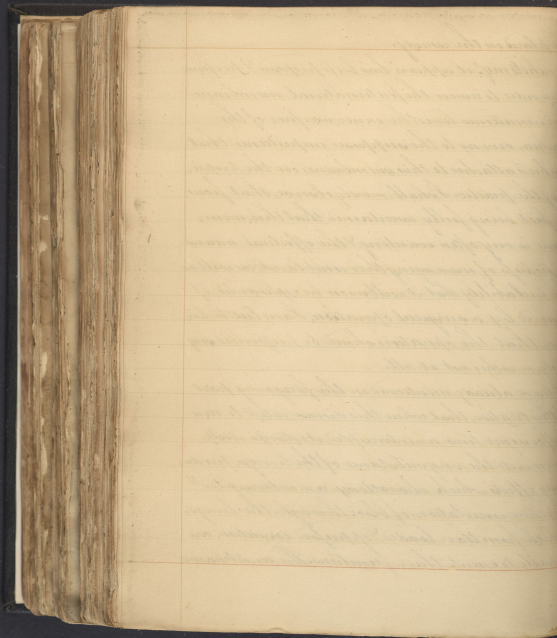
It is sometimes of use to rub the thorax with some rubefacient application. Strict adherence to the antiphlogistic regimen should be enjoined. Inhaling vapour arising from warm water with a small addition of vinegar, may possibly be a good auxiliary both in lessening the violence of the spasms & assisting expectoration. The hep. sulphuris has been brought forward as a cure for croup, but not much dependence appear at present



to be placed in the remedy.

bronchotomy, it appears has been proposed & performed, in order to remove the preternatural membrane that sometimes lines the inner surface of the Trachea, owing to the supposed importance that has been attached to this membrane, on the propriety of the practice I shall merely observe, that from the fact being fully ascertained, that this membrane is very often wanting, & the effectual means we propose of managing this complaint, as well as the probability that it will soon be reproduced if removed by a surgical operation, I am led to believe that the operation should be performed very rarely, or rather not at all.

I have already mentioned in the foregoing part of this treatise, that when this disease is left to run on for some time uninterrupted, it extends itself down into the very substance of the lungs, producing effects which characterize an interrupted & defective circulation of blood through the lungs, which from their loaded & oppressed condition, are unable to execute their functions. The countenance



at the same time mottled, the cheeks have a circumscribed flush, with some mixture of lividness the eyes are prominent & inflamed, the pupil is often widely dilated, attended with an expression of countenance wild & agitated, the respiration is now either laborious with a full distended pulse, or the child sinking under the disease, has his respiration rather more tranquil with a weak irregular pulse. The cure as indicated by these symptoms, is to be conducted upon the plan of endeavouring to relieve the lungs & establish a free & equable circulation which we must first endeavour to fulfil by means of the warm bath.

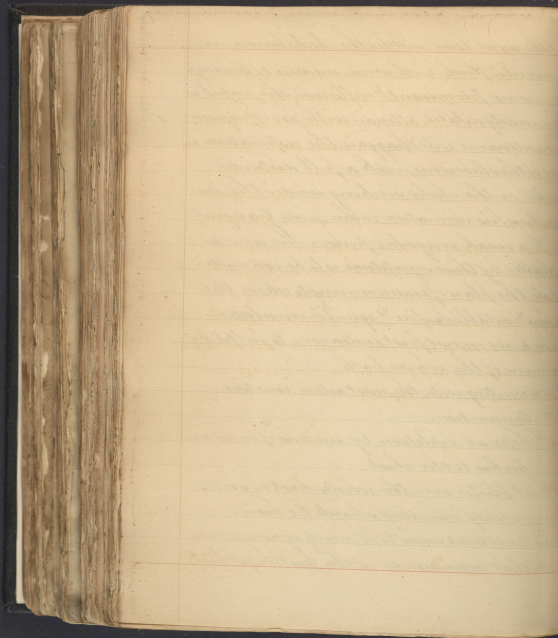
2^d Vomiting with the most active emetics,

3^d Venesection,

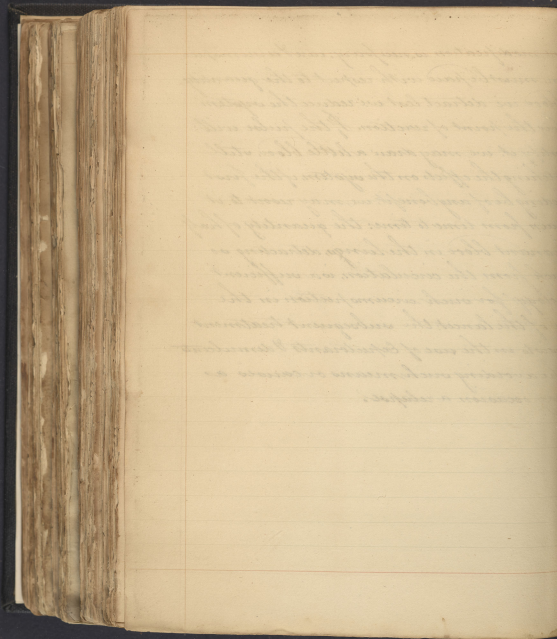
1st Topical depletion by means of cups and leeches to the chest

5th A blister over the whole chest, or some more speedy vesicatory should be used.

This treatment seems to be nearly synonymous with that recommended in the first stage, but



some modification is necessary; care & circumspec-
tion, must be paid with respect to the quantity
of blood we detract, lest we reduce the system
below the point of reaction. If the pulse will
justify it, we may draw a little blood, still
watching the effects on the system, if the first
bleeding be of any benefit, we may resort to it
again from time to time: the quantity of half
stagnant blood in the lungs, detracting so
much from the circulation, is a sufficient
apology for such circumspection in the
use of the lancet: the subsequent treatment
consists in the use of Expectorants & demulcents
& the avoiding such means or causes as
may occasion a relapse.



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